

## **REMARKS**

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks. Applicants respectfully thank the Examiner for holding a telephone interview with Applicants' representative. The Examiner's kind remarks have been incorporated herein.

### **I. CLAIM STATUS AND AMENDMENTS**

Claims 2, 5, 8 and 9 were pending in this application when last examined.

Claims 2, 5, 8 and 9 are cancelled without prejudice or disclaimer thereto.

Claim 10 is newly added. Support can be found in claim 5 as filed and on page 14, line 24 to page 15, line 16, page 4, lines 20-24 and Process (b) on page 7 of the specification.

No new matter has been added.

### **II. INDEFINITENESS REJECTIONS**

Claims 2, 5, 8 and 9 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite for the reasons set forth on pages 3-4 of the Office Action.

Applicants respectfully traverse this rejection as applied to new claim 10.

Without acquiescence to the correctness of the Examiner's position, new claim 10 recites E. Coli expressing GlcNAc-6P 2-epimerase and GlcNAc synthase. As noted on page 4 of the specification, an intracellular enzyme found in E. Coli transforms GlcNAc into GlcNAc-6P. GlcNAc-6P is the correct substrate for GlcNAc-6P 2-epimerase. Thus, Applicants respectfully contend that the process of claim 10 is now clear.

### **III. OBVIOUSNESS REJECTION**

On pages 4-7 of the Office Action, claims 2, 5, 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishige et al. (Biosci. Biotechnol. Biochem., 2001) in view of Kohno et al. (Agric. Biol. Chem., 1983) and Rodriguez-Aparicio et al. (Biochimica. et Biophysica. Acta., 1999) and further in view of Tabata et al. (Enzyme & Microbial Technology, March 2002). Applicants respectfully traverse this rejection.

Initially, Applicants note that the subject matter of previously pending claims 2 and 8 are cancelled and therefore this rejection with regard to these claims is moot.

With regard to new claim 10, Applicants note that the Examiner contends that Tabata et al. teaches producing NeuAc using NeuAc synthase and ManNAc as a substrate. Applicants respectfully refer the Examiner to the disclosure in the specification starting in the last full paragraph on page 3 through the second paragraph on page 4. In particular, Process (3) as taught on page 3 indicates that the art teaches producing NeuAc using NeuAc synthase and ManNAc as a substrate. However, as indicated at the bottom of page 3, Process (3) employs GlcNAc-6P 2-epimerase which functions only in the presence of ATP. Such ATP is expensive.

However, claim 10 excludes the use of ATP.

Thus, Applicants contend that the cited references fail to teach or suggest using the claimed process without expensive ATP. Such method is not taught or suggested by the cited art.

Also, the Examiner is again respectfully requested to review the Declaration submitted with the previous response. The Declaration is by a person of skill in the art and includes an attached publication (Hamamoto et al.). Such Declaration and attached reference show that undue experimentation was required in order to obtain the high yield processes of the claimed invention.

For further example, it is noted that in Comparative Example 1 which ends on page 28 of the specification, only 6.28 mM CMP-NeuAc was produced. On the other hand in Examples 1 and 2 of the specification, which are embodiments of the independent claims of the claimed invention, 21.4 mM CMP-NeuAc or 25.6 mM CMP-NeuAc was produced. Such is a surprising and unexpected increase in yield of the end product which is an inherent feature of the claimed process.

Thus, Applicants respectfully suggest that this rejection, as applied to new claim 10, is untenable as the cited references fail to teach or suggest the claimed method without ATP in the cited process and furthermore that the cited references fail to teach or suggest that such claimed process result in an inherent increase in yield which is surprising and unexpected.

**CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and early notice to that effect is hereby requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact the undersigned attorney at the telephone number below.

Respectfully submitted,

Toshitada NOGUCHI et al.

/William R.

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